

**(C) REMARKS****Emeric et al.**

The Examiner rejected claims 1 and 5 as being anticipated by U.S. Patent No. 6,909,283 to Emeric, et al (Emeric). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F. 2d 628, 631, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). As an initial matter, the Emeric patent teaches the circulation of coolant through coolant tubes 76 embedded in the resonance module 74. The present invention provides for air-cooled patient bore, which is disposed inside the hollow cylindrical area defined by the resonance module. Claims 1 and 5 are believed to be patentable on these grounds alone.

With reference to the Emeric drawings, the applicant respectfully suggests that his invention would be disposed *inside* the area defined by reference numeral 75 of the Emeric reference.

Secondly, and contrary to the Examiner's suggestion that Emeric discloses "means for directing air through cooling tubes to cool RF air," Emeric actually teaches the use of a vacuum pump 78 within the vacuum chamber 74 of the resonance module configured to expunge any air/moisture in the vacuum chamber. Col. 6, lines 42-45. Additionally at Col. 6, lines 13-16, Emeric states, "Further enclosed in vacuum chamber 74 are a number of cooling tubes 76 configured to circulate liquid coolant, such as water, ethylene, or a propylene glycol mixture, to reduce heat generated by the excitation of the gradient coils." Based on the above, the applicant respectfully suggests that the Emeric reference fails to teach the air cooled patient bore enclosure claimed in claims 1 and 5.

**Dean et al.**

The Examiner rejected claims 17 and 19 under 35 U.S.C. § 102(e) on the grounds that they are anticipated by U.S. Patent Application Publication No. 2002/73717 to Dean et al. (the Dean reference). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F. 2d 628, 631, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). The Dean reference discloses the use of a liquid coolant system for cooling the RF coils within the RF space in an MRI system. Dean at ¶¶27, 29. Reference numeral 32 denotes the patient bore enclosure shown by Dean. Clearly the RF space 40 and the cooling tubes 42 are located concentrically outside the patient bore enclosure 32. Therefore, the present invention is believed to be patentable over Dean on the grounds that the invention would be disposed inside the area defined by reference numeral 32 of Dean.

*Dean in view of Emeric*

The Examiner rejected claims 19, 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Dean in view of Emeric. In order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference or references must teach or suggest all of the claimed limitations. This teaching or suggestion to combine must be found in the prior art, and not based on the applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

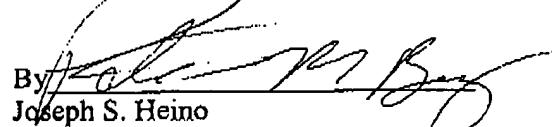
The applicant respectfully suggests that, as discussed above, neither reference teaches an air cooled patient bore enclosure. Additionally, the Dean reference actually teaches against the

use of air cooling, that is, "liquid cooling does a better job cooling system components" and that "higher currents and cooling efficiency must be sacrificed in air cooled systems." Dean at ¶20. Emeric discloses the problem of cooling the RF space and teaches the use of liquid cooling the RF space of an MR device.

The claims of the application, as now amended, and as discussed above are believed to be in position for allowance because they now more clearly claim an air cooled patient bore enclosure. As discussed above, Dean and Emeric teach apparatuses for liquid cooling of an RF module as opposed to the use of an air cooled patient bore enclosure.

The applicants have provided a new, useful and non-obvious improvement to air cool the patient area of an MRI system. For their ingenuity, they are entitled to the protection of the United States patent laws. Allowance of the claims is respectfully requested.

Respectfully submitted,  
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